

Weekly Report

Yuxin Ma

2017.08.28 - 2017.09.03

Projects

Deep Learning on Trajectory Data

- **Overview of the Taxi Data** Figure 1 shows an overview of all the location records. The coverage is quite broad.
- **Feature Extraction of the Trajectories** This week I read the two related papers [1, 2] on deep graph learning. Currently the basic idea is to re-order the adjacency matrix of the network flow graph in order to put the valued edges near the diagonal positions in the matrix, and then use different strategy to perform convolution for CNN layers.

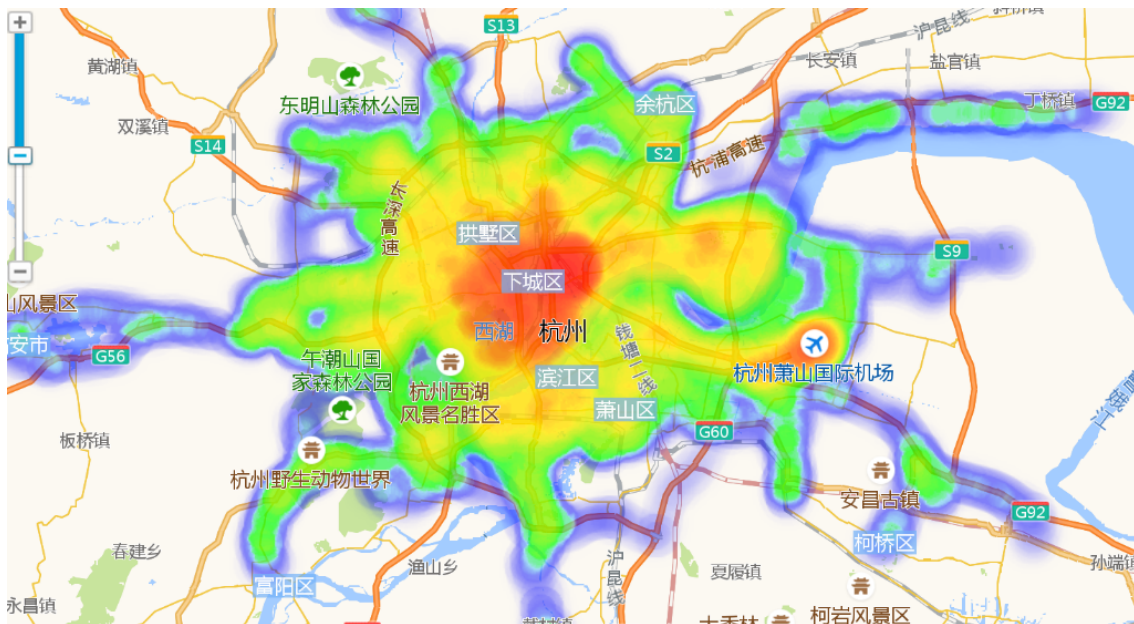


Figure 1: A heatmap of all the location records.

Misc.

Coursewares for Graduated Students

This week the two slides were finished. In the next week some items are to be added according to Prof. Chen's comments.

FADS 2017 Review

Submitted.

ACM TIST Special Issue Submission

Submitted.

Table 1: Plan for the Next Week

DDL Date	Project	Progress
09.07	Review of a Visual Informatics paper Not yet start	
09.10	DeepVis paper review	
09.10	Courseware for graduated students	Revise based on the comments.
12.30	Deep learning and trajectories	
10.20	PhD Thesis	

References

- [1] Z. Luo, L. Liu, J. Yin, Y. Li, and Z. Wu, “Deep Learning of Graphs with Ngram Convolutional Neural Networks,” *IEEE Transactions on Knowledge and Data Engineering*, no. 2, pp. 1–14, 2017.
- [2] J. Zhang, Y. Zheng, and D. Qi, “Deep Spatio-Temporal Residual Networks for Citywide Crowd Flows Prediction,” in *AAAI*, 2017.